

This Fact Sheet will tell you about:

- EPA Groundwater Assessment
- Fourth Five-Year Review
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EPA Groundwater Assessment

EPA is currently performing a groundwater assessment at the Site. The purpose of this assessment is to verify if the approved groundwater cleanup standards for the Site, based on historical levels, are still appropriate. In 2006, EPA, the Nuclear Regulatory Commission (NRC) and the New Mexico Environment Department (NMED) approved groundwater cleanup levels for the Site that are higher than safe drinking water standards. Based on additional information from the work that EPA has completed in the San Mateo basin in the past few years and historic information provided by the community, the EPA is performing this assessment. Data from this groundwater assessment efforts will help EPA understand the nature of contamination and provide additional lines of evidence to determine if the background levels of uranium is natural or impacted by milling operation. EPA has engaged the United States Geological Survey (USGS) to perform the investigation related to this work. Sampling was performed in three phases:

Phase 1 – Geophysical Investigation

The purpose of conducting borehole geophysics is to better understand the subsurface conditions such as well construction, rock lithology and fractures, permeability, porosity, and water quality. A variety of tools such as optical televiewer, natural gamma and spectral gamma, caliper, fluid temperature, resistivity, electromagnetic induction (at non-metallic wells), and flowmeter logs were used to collect data during the well logging process at the Homestake Site. USGS conducted a borehole geophysical investigation during August 2016.



Inserting a tool into a well for logging

Phase 2 – Passive Groundwater Sampling

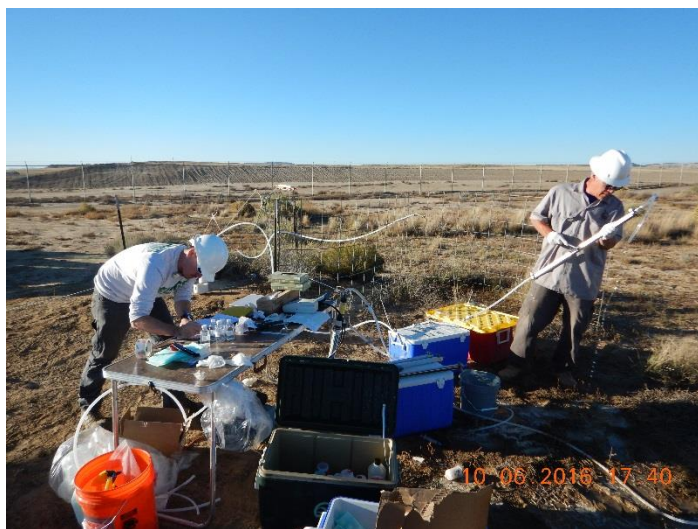
One of the passive sampling techniques involves deploying plastic sample containers filled with deionized water in the well for a period of 3-4 weeks. Samplers are placed at discrete depths in a nylon mesh and attached with zip ties to a rope hanging inside the well. Over time chemicals diffuse through the nylon screen placed on the mouth of the sampler and equilibrate with water in the well. Discrete depth sampling can provide useful information regarding the vertical chemical profile of the well. Six wells were selected for sampling in both alluvial and Chinle aquifers. Samplers were deployed in September 2016 and retrieved in October 2016.



Samplers in nylon mesh being tied to a rope line with zip ties

Phase 3 – Groundwater Sampling

During Phase 3 field activity in October 2016, EPA retrieved the passive samplers from the wells and collected groundwater samples from 20 wells for analysis. Groundwater samples will be analyzed not only for a standard suite of parameters (metals, general chemistry) but also for a number of specialized non-standard parameters such as isotopes, radon, noble gases, tritium and chlorofluorocarbons. USGS deployed three teams to collect the samples. Homestake collected split samples for independent analysis.



USGS team preparing for sampling

Fourth Five-Year Review

The fourth Five-Year Review for the Site was completed in September 2016. The Five-Year Review is required due to the fact that hazardous substances, pollutants or contaminants remain at the Site above levels allowable for unrestricted use and unrestricted exposure. The purpose of the Five-Year Review was to evaluate whether the operating remedy is working as intended and providing the necessary protection.

The Site consists of three project areas called operable units (OUs). OU1 is identified as tailings seepage contamination of groundwater aquifers; OU2 is identified as long-term tailings stabilization, surface reclamation, and site closure; and OU3 is identified as radon concentrations in the neighboring subdivisions. The Site's remedy for OU1 and OU2 consists of long-term remedial actions, including a groundwater collection and injection system, reverse osmosis (RO) and zeolite treatment of contaminated groundwater, long-term stabilization of a large tailings pile (LTP) and a small tailings pile (STP), surface reclamation, monitoring and institutional controls. The Site's potentially responsible party (PRP), Homestake, is implementing

groundwater restoration activities as well as mill decommissioning and reclamation at the Site under NRC's authority for license termination. EPA has not issued Records of Decision (RODs) for cleanup activities for OU1 and OU2. In 1989, EPA issued a no-action ROD for OU3 (radon contamination) in neighboring subdivisions. Due to community concerns, EPA conducted additional investigations between 2010 and 2014 to support a supplemental human health risk assessment (HHRA) for the residential areas outside the facility's licensed boundary.

The groundwater collection and injection system is containing the highest contaminant concentrations within a defined collection area, primarily within the facility's licensed boundary. The system is also reducing contaminant concentrations in groundwater beyond the facility's licensed boundary. Residents in the neighboring subdivision utilize the public water supply extended to them pursuant to a 1983 CERCLA¹ Consent Decree or have been given the option to connect to public water. An Institutional Control in the form of a health advisory is in place to caution current and future owners and private well users about potential contamination. Contaminated soil at the former mill was excavated and disposed of in the LTP within the facility's licensed boundary. The mill was decontaminated, demolished and parts were buried in place or placed in the LTP. A final radon barrier and erosion protection cover were constructed on the sides of the LTP. Interim soil covers were constructed on the top of the LTP and on the STP. Radon mitigation systems and soil/debris removal efforts in the residential areas mitigated exposures to unacceptable levels of contaminants. Exposures to contamination are currently controlled.

Five-Year Review Results

EPA has determined the remedy is protective in the short-term, but additional actions as specified below must be taken for the remedy to be protective over the long-term.

The following actions must be taken for the remedy to be protective over the long term: complete review of EPA CERCLA equivalency including assessment of groundwater and issue RODs for OU1 and OU2; update the timeframe estimate for groundwater restoration based on current operating conditions and data; include an estimate of the time needed for groundwater restoration of those areas outside the facility's licensed boundary in addition to the areas downgradient of the source areas; and investigate the source of the elevated uranium in the Homestake Mining Company supply wells in the San Andres aquifer to determine if pumping from the San Andres wells is drawing contamination into the deeper aquifer.

¹ Comprehensive Environmental Response, Compensation and Liability Act

Where to get more information

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Site Repositories

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Campus Library
1500 Third Street
Grants, NM 87020
505.287.6639

Mother Whiteside Library
525 West High Street
Grants, NM 87020
505.287.4793

For press inquiries, please call the EPA Press Office at 214.665.2200.

On the web:

You can find more information about the Region 6 Superfund program on EPA's Region 6 website:
<https://www.epa.gov/aboutepa/epa-region-6-south-central>

Homestake site information can be found online here:
http://www.epa.gov/region6/6sf/new-mexico/homestake_mining/index.html

Para recibir una traducción en español de esta hoja de datos, comunicarse con la Agencia de Protección del Medio Ambiente de los EEUU (la EPA) al número de teléfono 1.800.533.3508 (llamada gratis).

